

# **IOWA HIGHWAY RESEARCH BOARD**

*Minutes of September 28, 2001*

## **Regular Board Members Present**

J. Adam  
J. George  
L. Greimann  
B. Keierleber  
K. Mahoney

J. Odgaard  
D. Osipowicz  
J. Selmer  
W. Weiss

## **Alternate Board Members Present**

R. Gould for S. Larson  
J. Weber for J. Witt  
S. Andrie  
L. Brehm

G. Miller  
C. Van Buskirk  
B. Younie

## **Board Members With No Representation**

D. Julius  
R. Krauel  
T. Myers  
M. Nahra

## **Secretary**

M. Dunn

## **Visitors**

Ed Engle  
Elijah Gansen  
Ian MacGillivray  
Mohammad Mujeeb  
Joe Putherickal  
Bob Steffes  
Sara Buseman  
F. Wayne Klaiber  
David Eash  
Rob Middlemis-Brown

*Iowa Department of Transportation*  
*Iowa Department of Transportation*  
*Iowa Department of Transportation*  
*Iowa Department of Transportation*  
*Iowa Department of Transportation*  
*Iowa Department of Transportation*  
*Iowa Department of Transportation*  
*Iowa State University*  
*U.S. Geological Survey*  
*U.S. Geological Survey*

**The meeting was held in the Iowa Memorial Union at The University of Iowa, Iowa City, Iowa. The meeting was called to order at 9:50 A.M. by John Adam.**

#### **Agenda Review/Modification**

- Agenda item 5, the final report for TR-408, “Investigation of Glass Fiber Composite Dowel Bars For Highway Pavement Slabs” by Max Porter of Iowa State University, will be deferred until the October 26, 2001 meeting.

#### **Approval of the Minutes**

- Kevin Mahoney moved to accept the minutes from the June 29, 2001 meeting with no additions or corrections. Jacob Odgaard seconded. Carried with 11 yes, 0 no, and 0 abstaining.

#### **Proposal, “Investigation of Modified Beam-in-Slab Bridge System”, (Investigation of Two Bridge Alternative for Low Volume Road - Phase III)**

- F. Wayne Klaiber, Iowa State University, presented the background information, examples, objectives, six research tasks, evaluation steps, implementation, personnel list and responsibilities, and modified budget information of the proposed research.
- Dennis Osipowicz moved to approve the proposal. Jerry Weber seconded. Carried with 11 yes, 0 no, and 0 abstaining. (Funding: 100% Secondary)

#### **Final Report, HR-395A, “Techniques for Estimating Flood-Frequency Discharges for Streams in Iowa”**

- David Eash, U.S. Geological Survey, reviewed the primary objectives, maps of regions, equations for the different regions, and general information from the written final report of the study. He also mentioned that a PDF version of the report is available for download from the USGS website.
- There was discussion about concern with the sizable difference between the outcomes of these equations verses the last set of equations (Oscar’s 1987 report). One example given had resulted in a 20% increase in bridge length with the new equations and overestimated by 2 to 2 ½ times, a 50-year flood event. This is also effecting the decision of putting a twin box culvert upstream from a single box culvert that was built after the ‘87 report. There was not overtopping of the second box culvert downstream in a recent actual flood event. This particular site is in the Des Moines Lobe. Other counties are also seeing this type of increase (Jones county was mentioned in particular). David Eash reported that this is probably happening for 2 reasons: 1) more positive skews and 2) higher flood frequency discharge in the last decade (flood of ’93). It is also important to make sure the equations are being used correctly.
- Roger Gould will get a committee together to include Wade Weiss, Sandra Larson, and David Eash to discuss this issue. Wade Weiss will also check with other county engineers, including Mike McClain, Jones County Engineer, to see if any others are interested in having input. It was requested that this committee bring a report of the findings back to the board.

- It was discussed if action should be taken to approve the report at this time or not, in case the approval from the IHRB would result in the report equations becoming the required method to be used in any Federal aid funding projects. After discussion and review of the Memorandum of Agreement, it was decided that this board was not in place to effect implementation, but was in place to accept or not the written report.
- Kevin Mahoney will discuss the implementation issue with Dave Claman and Larry Jesse at the DOT and get specific information back to the board on the requirements for using these formulas.
- With the data itself not being what was questioned, Wade Weiss moved to approve the report. John Selmer seconded. It was approved with 11 yes, 0 no, and 0 abstaining.

### **Final Report, TR-454, “Durable, Cost-Effective Pavement Markings, Phase I: Synthesis of Current Research”**

- Steve Andrie, Iowa State University/CTRE, presented the evaluation criteria, recent research, test protocols, new techniques, and recommendations of the synthesis report investigated and written by Gary Thomas, Iowa State University/CTRE.
- The recommendations included not proceeding to Phase II because markings are commonly situational and have no easy answers. Tying into National Transportation Product Evaluation Program (NTPEP), which is an ongoing program sponsored by AASHTO since 1994, is a good source of information on lab work and field work that is already out there (search NTPEP on internet and select from the first screen). NTPEP does not make recommendations, but they do give results and individual conclusions can be drawn.
- It was emphasized that this was just a literature review and that there is a lot of information out there that can be found through NTPEP (AASHTO) and individual states to gain knowledge on specific techniques to make an educated decision.
- Jim George moved to approve the final report. Brian Keierleber seconded. Carried with 11 yes, 0 no, and 0 abstaining.

### **Review of IHRB Business Plan, Draft 7**

- Mark Dunn pointed out the highlighted recommended changes and the added attachments in the Business Plan Draft.
- After clarification and discussion, it was decided that Mark Dunn will add language into the text of the Business Plan to reference that *Attachment B* will be used as a guideline for evaluation and sent out (along with *Attachment A*) with the RFPs so that potential principal investigators will be made aware of the evaluation criteria.
- The board decided to proceed with the approval of adopting the document, with the above change, as the official IHRB Business Plan. Dennis Osipowicz moved to approve. Lowell Greimann seconded. Carried with 11 yes, 0 no, and 0 abstaining.
- Mark Dunn will include a review of the Business Plan on the meeting agenda on an annual basis. If other issues arise, such as working through the details of the *Conflict of Interest* area

as it comes more into play, the board reserves the right to discuss and make modifications as needed. These statements will also be added to the Business Plan.

- The Business Plan is included in the packet of information sent to each new board member and alternate as they join the board.

### **Review of Revised Solicitation for Transportation Information System for Road System Managers**

- Mark Dunn discussed the difficulty with which direction to take with the revision of this solicitation. The board never came to a decision at the last meeting if the original RFP was too broad, too focused, or what was originally desired from the board. Input from different board members since the last meeting, also led to similar conflicting opinions on the issue.
- Some of the comments that Mark Dunn received from the board members included the following: if the RFP is more focused (such as on structures), there is a better chance of getting more successful research; request for proposals to include examples of how it would benefit each jurisdiction; and road managers with limited time and research capability need a broad identification and evaluation of the current practices, costs, effectiveness, and emerging technology, from that, they can select the most applicable system.
- It was mentioned that there is a big jump between technology to detect something and useful information with which you can manage the system. That jump seems to be the problem area. The word “system” infers covering that jump and putting into place something that can be implemented.
- Jacob Odgaard was involved with the original concept. He stated that the original concept was much more broad. The board initially split that concept in two, which led to one system for users and one system for managers. It was also originally designed to be a synthesis, which could lead to further solicitations. Basically, to start with a review of types of technologies that are available and where are they in the stages of development. If there are technologies that are close to the market, it would be useful to know. There are efforts going on at various universities and how we get that information to this board is really the first issue. Among the technologies that are found, the board could choose a few that are attractive, which could lead to future solicitations.
- It was agreed that with this interpretation in mind, Mark Dunn would revise the RFP and it will be voted on at the October meeting.

### **Review and Discussion of Defined Priority Projects for FY 01-02**

#### **• *Bridge Approach Settlement***

- Due to the considerable number of responses from the literature search at this time, this topic will be deferred until a summary of available information is assembled. (Waiting specifically on the South Dakota DOT state summary report.) After the information arrives and a summary is complete, the board can review the general aspects and then decide on a direction.

- ***Effects of Anti-icing Solution on the Deterioration of Highway Infrastructure and Equipment***
  - There is not much current research out there on this topic. The DOT is doing an internal lab study of the chloride intrusion in PC pavement and looking at the deterioration of the joints. That has a different scope than this; this would take it one step further.
  - After discussion, it was decided to break this topic into two separate RFPs: one for infrastructures and one for equipment.
  - Jerry Weber will serve as the technical contact for the equipment RFP. Mark Dunn will also contact Brad Osborne from DOT Maintenance Office and see if he would be willing to be a technical contact.
  - Dennis Osipowicz will serve as the technical contact for the infrastructure RFP.
- ***Update Method to Determine Pavement Damages Resulting from Detours and Haul Roads***
  - It was suggested that incorporating some of the newer technology, such as FWD, would be beneficial in this study.
  - Kevin Mahoney will get a recommendation to Mark Dunn for a DOT person to serve as a technical contact.
  - Wade Weiss will also serve as a technical contact.
- ***Edge Rut and Earth Shoulder Maintenance***
  - It seems that most of the current information received at this point, is based on what the best methods are that are being used, not what improvements can be made.
  - Mark Dunn will gather more information from FHWA studies and an NTIS Manual. After that, the board will review the information and decide if it is sufficient, or if further research is merited with a more specific scope.
- ***Maintenance Vehicle Visibility and Protection***
  - With a couple of recent federal studies and Minnesota also conducting research on this topic, it was decided that an RFP requesting a synthesis report would be the most beneficial first step.
- ***Economic/Non-Corrosive De-Icer***
  - This topic will be added as another aspect in the RFPs on Effects of Anti-icing Solution on the Deterioration of Highway Infrastructures and Equipment. It will ask for, not only what are the effects, but also what are some alternatives. The alternatives are usually costly, so it would be a benefit to incorporate an economic study into the report.
  - Mark Dunn will check with Dennis Burkheimer as to his interest in serving as a technical contact.
  - After the RFPs are written, the board can discuss if they are too broad or not.
- ***Rubblization or Crack & Seal Techniques***
  - An RFP requesting research on economic analysis and service life will be prepared.

- Brian Keierleber will serve as a technical contact.
- Mark Dunn and Brian Keierleber will work on deciding who would be good to ask to serve as additional technical contacts from the counties and the DOT.
- ***Training Surveyors, Mechanics and Technicians***
  - It was agreed that DMACC and the DOT do a nice job training technicians and surveyors; more help is needed in the training area for mechanics. Counties are running into the problem that the vendors of the equipment want to do the work themselves and do not provide any assistance to mechanics.
  - Jerry Weber is working on developing a tri-state training center.
  - The DOT has a lot of foundational work on this type of training. The DOT mechanics have training at DMACC every year specific to what the needs had been that year.
  - Ian MacGillivray, with the assistance of a couple offices at the DOT, will work on getting a report together in the next couple of months that compiles what is available now from DMACC, the Western Iowa program, and others, and look at how that all fits the need that is identified here, what it would take to make it portable, and where the gaps are located. The board can then decide what direction it would like to take to make it most useful to all the jurisdictions.
  - The use of board funds to develop curriculum (not “research” per say) was also discussed. This practice has been done in the past and is a permissible use of the money because it is research and engineering development. This research would hold great practical application for the dollars spent and would be more valuable to many than a report that sits on a shelf.

#### **New Business**

- The new alternate board member for Randall Krauel is Jerry Byg from the City of Ames.
- The letter on HDPE plastic pipe research from Senator Steve King, Sixth District, will be discussed at next month’s meeting.
- The location of the next meeting will be the Scheman Building at Iowa State University in Ames. Room details will be included in the next board packet.

**John Adam adjourned the meeting.**

#### **Date of Next Meeting:**

**THE NEXT MEETING WILL BE HELD OCTOBER 26, 2001 AT 9:00 A.M. IN THE SCHEMAN BUILDING AT IOWA STATE UNIVERSITY, AMES IOWA.**

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Mark Dunn, IHRB Secretary